18-Detection of *Sugarcane yellow leaf virus* by a novel reverse transcription loop-mediated isothermal amplification method from three sugarcane production regions in Kenya.

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Sugarcane yellow leaf is a disease caused by *Sugarcane yellow leaf virus* (SCYLV). It is a major emerging disease of sugarcane that has been reported worldwide the last two decades. Efficient tools have been developed for detecting SCYLV but their use requires sophisticated facilities and still remains expensive. Our partners from developing countries cannot easily use them, which hamper an efficient and early diagnostic of the disease in sugarcane production regions. The main goal of this study was to develop an "easy-to-use" method for detecting SCYLV at the level of partner laboratories and potentially at the field level. We develop a novel reverse transcription loop-mediated isothermal amplification method (RT-LAMP) for detecting SCYLV. This method was compared to the classical methods routinely used at CIRAD Montpellier sugarcane quarantine facilities (RT-PCR and Tissue Blot Immunoassay). The three methods were then used for detecting SCYLV in three sugarcane production regions from Kenya, for which no data of prevalence of the disease existed so far. The first results showed that the RT-LAMP is more efficient than the reference methods. SCYLV is present in the three sugarcane production regions with prevalence rate ranging from 5% to 20%. This is the first report of sugarcane yellow leaf disease in Kenya. Furthermore, this is the first report on the application of the LAMP assay for early diagnostic of sugarcane yellow leaf disease from sugarcane production regions. Due to its simplicity, sensitivity and cost-effectiveness for common use, we believe that this assay should be used as an early diagnostic tool by our partners at the field level.